

Supplementary Results

Reduced peanut sensitization with triple exposure to maternal peanut consumption, breastfeeding, and early peanut introduction (Azad et al.)

Table S1. Characteristics of dyads included in the current analysis compared to the full CHILD cohort.

Variable	General CHILD Cohort N=3264	Included in Current Analysis N=2759
Study centre		
Edmonton	765/3264 (23.4)	628/2759 (22.8)
Toronto	765/3264 (23.4)	568/2759 (20.6)
Vancouver	730/3264 (22.4)	664/2759 (24.1)
Winnipeg	1004/3264 (30.8)	899/2759 (32.6)
Sex (male)	1717/3264 (52.8)	1458/2759 (52.6)
Maternal ethnicity (White)	2339/3213 (74.7)	2049/2743 (74.7)
Maternal education (completed post-secondary degree)	2394/3133 (76.4)	2082/2685 (77.5)
Maternal age, years	32.3 (4.7)	32.4 (4.6)
Maternal peanut consumption		
Never or <1/month	261/2976 (8.8)	221/2586 (8.5)
Infrequent (1/month to <1/week)	675/2976 (22.7)	577/2586 (22.3)
Regular (at least 1/week)	2040/2976 (68.5)	1788/2586 (69.1)
Breastfeeding initiation	3183/3262 (97.6)	2699/2759 (98.0)
Breastfeeding duration, months	10.4 (6.8)	11.1 (6.8)
Maternal Atopy & Allergy		
Atopy		
Any allergen	1729/2995 (57.7)	1580/2724 (58.0)
Peanut	136/2992 (4.5)	117/2721 (4.3)
Food allergy (self-reported)		
Any food	688/3162 (21.8)	605/2708 (22.3)
Peanut	70/3161 (2.2)	62/2707 (2.3)
Child Atopy & Allergy		
Atopy (Any allergen)		
1 year	398/2924 (13.6)	363/2712 (13.4)
3 years	379/2672 (14.2)	356/2479 (14.4)
5 years	493/2546 (19.4)	460/2369 (19.4)
Atopy (Peanut)		
1 year	137/2919 (4.7)	126/2708 (4.7)
3 years	106/2650 (4.0)	100/2460 (4.1)
5 years	104/2505 (4.2)	96/2328 (4.1)
Probable Allergy (Peanut)*		
3 years	46/2591 (1.8)	46/2396 (1.9)

Values are n/N (%) or mean (standard deviation).

Atopy defined by skin prick testing as: mean wheal diameter ≥ 2 mm larger than the negative control.

*Probable clinical IgE-mediated peanut allergy, defined as: sensitization to peanut, not consuming peanut at least once per month, and having a convincing history of signs or symptoms of an allergic reaction to peanut.

Table S2. Peanut sensitization at 1, 3 and 5 years in the CHILD cohort, according to breastfeeding status and timing of peanut introduction.

Peanut introduction	Peanut Sensitization						Probable Peanut Allergy	
	1 Year (N=2708)		3 Years (N=2460)		5 Years (N=2328)		3 Years (N=2396)	
	n/N (%)	aOR (95% CI)	n/N (%)	aOR (95% CI)	n/N (%)	aOR (95% CI)	n/N (%)	aOR (95% CI)
Avoided >12 months	101/1734 (5.8)	1.00 (reference)	82/1566 (5.2)	1.00 (reference)	86/1485 (5.8)	1.00 (reference)	40/1475 (2.6)	1.00 (reference)
Introduced without BF	10/437 (2.3)	0.39 (0.19, 0.72)*	10/396 (2.5)	0.48 (0.23, 0.89)*	7/373 (1.9)	0.34 (0.14, 0.68)*	4/386 (1.0)	0.44 (0.14, 1.07)
Introduced with BF	15/537 (2.8)	0.47 (0.26, 0.79)*	8/498 (1.6)	0.33 (0.14, 0.61)*	3/470 (0.6)	0.12 (0.03, 0.31)*	2/489 (0.4)	0.19 (0.04, 0.53)*

BF, breastfeeding; aOR, adjusted odds ratio; CI, confidence interval. aORs are adjusted for maternal atopy and study site.

*p<0.05 compared to reference group.

Table S3. Peanut sensitization at 5 years in the CHILD cohort, according to breastfeeding status and timing of peanut introduction, with and without adjustment for breastfeeding duration. (N=2328)

Peanut Introduction	aOR (95%CI) for Peanut Sensitization at 5 years		
	Basic Model	Adjusted for Breastfeeding Duration	Adjusted for age at Peanut Introduction
Avoided >12 months	1.00 (reference)	1.00 (reference)	1.00 (reference)
Introduced without BF	0.34 (0.14, 0.68)*	0.32 (0.14, 0.66)*	0.19 (0.03, 1.25)
Introduced with BF	0.12 (0.03, 0.31)*	0.13 (0.04, 0.33)*	0.07 (0.01, 0.58)*

BF, breastfeeding; aOR, adjusted odds ratio; CI, confidence interval. *p<0.05 compared to the reference group.

Models are adjusted for maternal atopy and study site.

Table S4. Peanut sensitization at 1, 3 and 5 years in the CHILD cohort, according to breastfeeding exposures or maternal peanut consumption, without accounting for infant peanut consumption. (N=2759)

	OR (95%CI) for Peanut Sensitization at Age		
	1 year	3 years	5 years
Breastfeeding (BF) Exposures			
Any BF at 3 months (yes vs. no)	1.04 (0.63,1.84)	0.91 (0.53,1.67)	1.03 (0.58,1.98)
Exclusive BF at 3 months (yes vs. no)	0.79 (0.55,1.14)	0.93 (0.62,1.40)	0.81 (0.54,1.22)
Any BF at 6 months (yes vs. no)	0.95 (0.63,1.47)	0.87 (0.55,1.41)	0.87 (0.55,1.42)
Exclusive BF at 6 months (yes vs. no)	1.22 (0.77,1.86)	1.14 (0.67,1.83)	0.99 (0.56,1.63)
Any BF at 12 months (yes vs. no)	0.91 (0.64,1.30)	0.90 (0.60,1.35)	0.91 (0.60,1.36)
Duration of Any BF (per additional month)	0.99 (0.97,1.02)	0.99 (0.96,1.02)	0.99 (0.96,1.02)
Maternal Peanut Consumption			
Never or <1/month	1.00 (reference)	1.00 (reference)	1.00 (reference)
Infrequent (1/month to <1/week)	1.04 (0.48, 2.46)	1.16 (0.54, 2.75)	1.08 (0.50, 2.55)
Regular (at least 1/week)	1.21 (0.62, 2.68)	0.88 (0.44, 1.98)	0.82 (0.41, 1.84)

Values are unadjusted odds ratios (OR) and 95% confidence intervals. No significant associations at p<0.05.

Table S5. Peanut sensitization at 5 years in the CHILd cohort, according to breastfeeding status and timing of introduction, stratified on maternal consumption.

Peanut Introduction	Mother Never/Rarely Eats Peanut (less than once per week) N=665		Mother Regularly Eats Peanut (at least once per week) N=1511	
	n/N (%) Peanut Sensitization at 5 years	aOR (95%CI) Peanut Sensitization at 5 years	n/N (%) Peanut Sensitization at 5 years	aOR (95%CI) Peanut Sensitization at 5 years
Avoided >12 months	27/481 (5.6)	1.00 (reference)	54/903 (5.9)	1.00 (reference)
Introduced without BF	2/99 (2.0)	0.45 (0.09, 1.44)	3/252 (1.2)	0.22 (0.06, 0.59)*
Introduced with BF	2/85 (2.3)	0.49 (0.10, 1.55)	1/356 (0.3)	0.07 (0.01, 0.25)*

BF, breastfeeding; OR, odds ratio; CI, confidence interval. Models are adjusted for maternal atopy and study site.

*p<0.05 compared to reference group.

Table S6. Sensitivity analyses for the association of peanut sensitization or allergy at 5 years with the timing of peanut introduction and breastfeeding in the CHILd cohort.

Peanut Introduction	Peanut Sensitization				
	Main analysis	Alternative cut-off for sensitization (≥3mm)	Alternative classification of exposure groups*	Excluding mothers (n=62) with self-reported peanut allergy	Excluding infants (n=39) with diagnosed atopic dermatitis before 6 months
Avoided >12 months	86/1485 (5.8)	77/1485 (5.1)	86/1485 (5.8)	83/1439 (5.8)	56/1009 (5.5)
Introduced without BF	7/373 (1.9)	5/373 (1.3)	5/247 (2.0)	7/366 (1.9)	5/242 (2.1)
Introduced with BF	3/470 (0.6)	2/470 (0.4)	5/596 (0.8)	3/467 (0.6)	3/302 (1.0)

Values are n/N (%). BF, breastfeeding. *Alternative classification for n=155 infants where we could not confirm if peanut introduction happened before or after breastfeeding cessation; see methods for details.

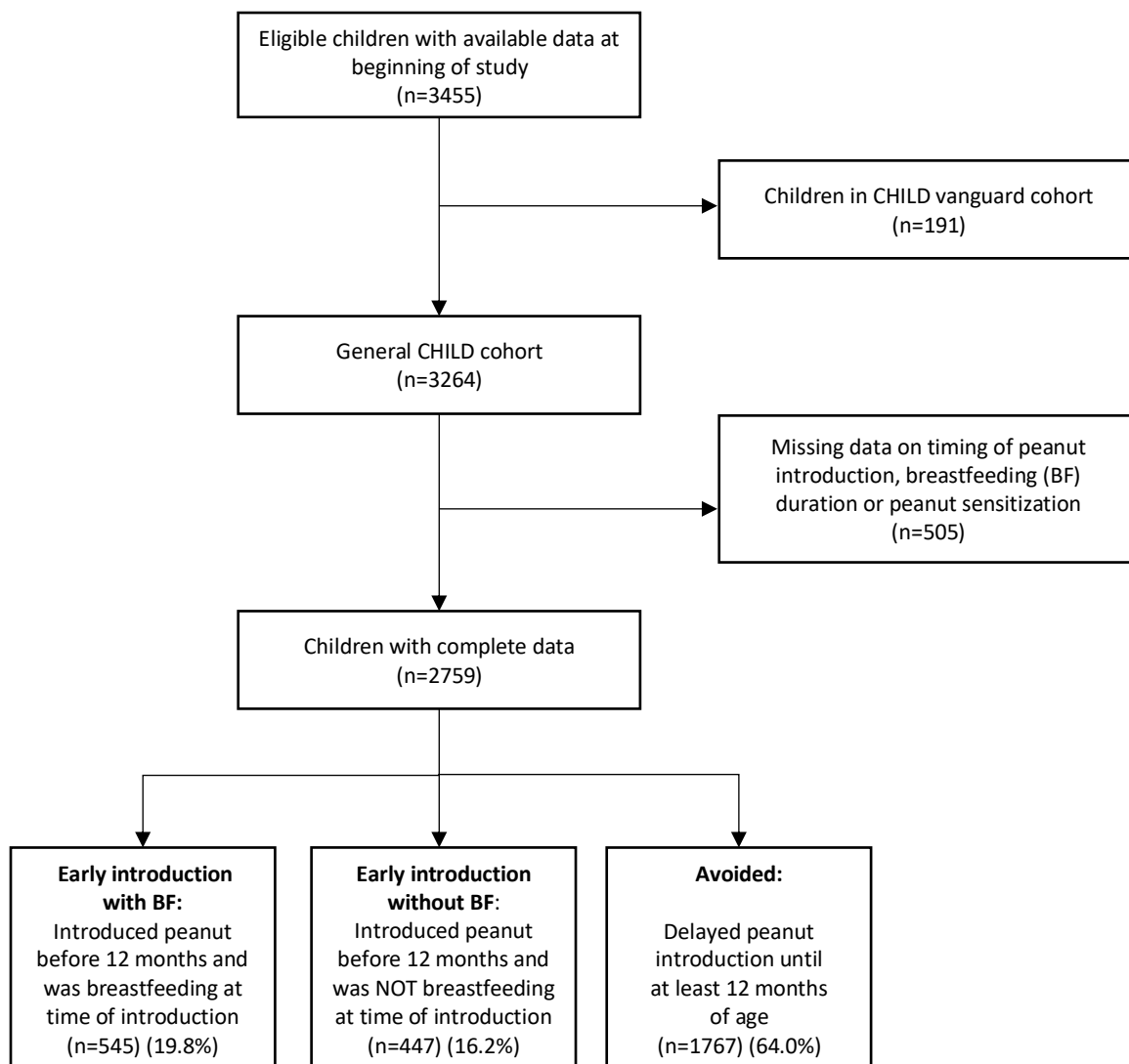
Table S7. Sensitivity analysis omitting mothers with unclear peanut consumption: peanut sensitization at 5 years in the CHILd cohort, according to breastfeeding status and timing of introduction, stratified on maternal consumption.

Peanut Introduction	Mother Probably Eats Peanut Regularly (original analysis) N=1511		Mother Definitely Eats Peanut Regularly (sensitivity analysis)~ N=1181	
	n/N (%) Peanut Sensitization at 5 years	aOR (95%CI) Peanut Sensitization at 5 years	n/N (%) Peanut Sensitization at 5 years	aOR (95%CI) Peanut Sensitization at 5 years
Avoided >12 months	54/903 (5.9)	1.00 (reference)	41/664 (6.2)	1.00 (reference)
Introduced without BF	3/252 (1.2)	0.22 (0.06, 0.59)*	2/219 (0.9)	0.17 (0.03, 0.51)*
Introduced with BF	1/356 (0.3)	0.07 (0.01, 0.25)*	1/298 (0.3)	0.08 (0.008, 0.30)*

BF, breastfeeding; aOR, adjusted odds ratio; CI, confidence interval. Models are adjusted for maternal atopy and study site.

~n=330 mothers who responded "YES" to consuming "peanuts and other nuts and seeds" but "NO" to "peanut butter" were excluded.

*p<0.05 compared to reference group.



Supplementary Figure 1. CONSORT Diagram. Vanguard cohort was excluded because data collection tools were modified for the General cohort and essential data for the current analysis was not compatible